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5/21/96

RHÔNE-POULENC

NORTH AMERICAN SHARED SERVICES

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TEL: (609) 452-5000

May 21, 1996

106063.A8

Sylvia Burges
Compliance Officer
RCRA Compliance Section, HW-104
U. S. EPA Region 10
1200 Sixth Ave.
Seattle, WA 98101

Dear Ms. Burges:

Subject: Response to EPA Comments on Draft Round 3 Data and Sewer Sediment Technical Memorandum for the Rhône-Poulenc Inc. Tukwila, WA Facility
Consent Order No. 1091-11-20-3008(h)
EPA ID No. WAD 00928 2302

Enclosed please find Rhône-Poulenc's response to EPA and Ecology comments on the Draft Round 3 Data and Sewer Sediment Technical Memorandum (Memorandum) for the Rhône-Poulenc Inc. Tukwila, WA facility.

As we discussed on March 25, 1996, Rhône-Poulenc believes that the sediment sampling should be completed and incorporated into the Memorandum before the Risk Assessment/Media Cleanup Standards evaluation is performed. As a result, we are not submitting revised pages for the Memorandum at this time. Instead, I have attached our response to your comments and a revised version of the sediment sampling plan incorporating your comments. Please let me know if you have any other items that you would like us to incorporate into the sediment sampling plan. We plan to collect sediment samples on July 1 and 2; the extreme low tide (minus 3.0 feet) should expose the bottom of the riprap in Slip No. 6 and enable us to collect samples from the smaller grained materials below the outfalls.

We plan to use Maxwell S-Cubed Laboratory of San Diego, California, to analyze the samples using Puget Sound Estuary Program (PSEP) protocols. Maxwell S-Cubed Laboratory performed the sewer sediment sample analyses last year as a subcontractor to PACE Laboratories. You will be receiving a letter shortly documenting Rhône-Poulenc's decision on future laboratory analyses.

Please call me at (609) 452-5064 if you have any questions.

Sincerely,

Rhône-Poulenc Inc

for Edwin Liu
Environmental Engineer

enclosures (2)
cc: Byung Maeng/Ecology NWRO
Teresa Michelsen/Ecology NWRO
Rachel Friedman-Thomas/Ecology Olympia
Sue Hays/Hays Consulting
Chuck Blumenfeld/Bogle & Gates
Liz Luecker/CH2M HILL

Responses to EPA and Ecology Comments
Rhône-Poulenc Draft Round 3 Technical Memorandum
May 16, 1996

The following responses address the EPA and Ecology comments on the Draft Round 3 Data and Sewer Sediment Technical Memorandum (January 1996) prepared for the Rhône-Poulenc Tukwila, Washington facility. The Technical Memorandum includes RFI Round 3 data. The EPA and Ecology comments were provided in a letter from Sylvia Burges/EPA 10 to Edwin Liu/Rhône-Poulenc dated March 27, 1996. Rhône-Poulenc's responses to the comments are presented below. For completeness, the EPA and Ecology comments are provided (in italics) followed by the Rhône-Poulenc response.

1. Page 2-3. The reason that Terra Nova Associates performed the sampling in March 1995 and the relationship of Terra Nova to the project should be documented. If Terra Nova, or another consulting group other than CH2M HILL, will be used again for sampling, EPA should review their sampling plan, prior to the sampling, to make sure that it is acceptable.

Rhône-Poulenc selected Terra Nova to conduct the Round 3 sampling for business reasons only. Terra Nova also oversaw removal of the PCB-contaminated compressor pad in January and was familiar with the facility. As stated in Appendix D, Terra Nova conducted their work in general accordance with the approved RFI sampling plan (prepared by CH2M HILL), with EPA Superfund Groundwater Issue: Groundwater Sampling for Metals Analysis (March 1989), and with Sample Procedures to be Used for Low-Stress Sampling. The last two documents were provided to Rhône-Poulenc in EPA's comments on the RFI report in a letter dated March 22, 1995 from Tom Post/EPA 10 to Edwin Liu/Rhône-Poulenc. The sampling methodology was changed to micropurge sampling in accordance with EPA's request; other parts of the sampling were in accordance with the approve RFI Workplan. Therefore, additional approval was not considered necessary.

2. Table 4.4. It seems that in many cases the Round 2 concentrations were considerably lower than Rounds 1 or 3. The report should discuss the reasons for this if known, and if not, then should propose some hypothesis which can be tested in future sampling rounds. Note that the concentrations for toluene, which are a contaminant of major concern at this site, vary by a factor of two, at concentrations ranging from 300,000 to 670,000 µg/l.

Page 4-11, Section 4.1.4, paragraph 3 discusses a potential reason for the increase in toluene concentrations. It should be noted that Rounds 1 and 3 were conducted during the January 1994 and March 1995, respectively, when LNAPL was present. Our site experience indicates that LNAPL usually appears in certain monitoring wells in January or February and disappears in March or April. In contrast, Round 2 sampling was conducted

in August and September 1994, when very little, if any, measurable LNAPL was present in the site monitoring wells (see RFI Report Table 4-21). LNAPL-associated constituents (i.e., volatile and semivolatile compounds) could possibly be the source of the higher concentrations found. The information on page 4-11 will be expanded to discuss this in greater detail. Note that the inorganics do not follow this trend.

3. Table 2-3. The text of the report should discuss the very high pH values in MW-16 shown in the table.

The reason for the high pH is unknown. Round 3 samples were taken on March 31, 1995, over six months after MW-16 was installed on August 9-10, 1994. As EPA is aware, the pH of groundwater can be altered by cement used to construct monitoring well seals. Usually, however, pH values return to normal levels within a short period of time (e.g., weeks). Since the well is screened at 40 to 50 feet below grade and the concrete surface seal only extends from the surface to 2 feet below grade, the concrete surface seal is not expected to be the source of the high pH. Unfortunately, the samples from Rounds 2 and 3 from MW-16 were not analyzed for conventional water quality parameters. Therefore, it is not possible to corroborate the field pH results with laboratory pH measurements. One possible explanation for the high pH is an historical spill or leak of a substance such as caustic soda (sodium hydroxide) or sodium-containing compound that migrated to the bottom of the aquifer.

The text in section 4.1.1, *Conventional Water Quality Parameters*, will be modified as follows:

> "The <u>laboratory</u> pH of groundwater samples from two wells was outside the action level range of 6.5 to 8.5 units: MW-12 (with a pH of 6.3) and MW-20 (with a pH of 5.9). <u>In addition, the field pH measurement for the sample from MW-16 was high at 11.24 units; no laboratory pH measurement was obtained for the sample from MW-16. The reason for this high pH is unknown.</u> As stated in the RFI Report, pH will not be addressed in the Risk Assessment/MCS evaluation.

4. Page 4-14. Section 4.2.3. The statement that "as indicated by the few times that the seeps have been seen, minus tides happen rarely" does not seem to be a logical statement. Frequency of very low tides is not dependent on seeps being seen.

The sentence will be changed to read: "Minus tides represent less than 20 percent of the low tides that occur each year in the Seattle area; minus two foot tides represent less than four percent of the low tides each year."

5. Section 6. Please provide an explanation for the presence of arsenic, cadmium, copper, and zinc in storm and process sewer sediments, seep samples, and in groundwater. Only copper is described as being related to facility operations; yet these, and other metals often showed up above action levels.

The action levels chosen for the RFI are the lowest available standard that could potentially apply to the medium (or an associated medium, i.e., surface water standards for groundwater). As discussed in the RFI Report, the action levels are being used as trigger levels to determine whether or not the constituent should be evaluated in the Risk Assessment/Media Cleanup Standards (RA/MCS) Report. The statistical evaluation of background versus site concentrations will be conducted and presented in the RA/MCS Report. The RFI Report (Appendix J) also shows that background concentrations of arsenic in soils and groundwater are very high in this area of the Duwamish. In a letter from Tom Post/EPA 10 to Edwin Liu/Rhône-Poulenc dated December 15, 1994 (attached), EPA agreed with this assessment.

As discussed in Section 2 and Appendix B of the RFI Work Plan (December 1993), the processes used at the facility employed mostly organic and non-metallic inorganic compounds; as far as it is known, copper was the only metal used in manufacturing processes onsite. Some metals may have been present as impurities in other compounds used onsite. As mentioned in a letter to Teresa Michelsen/Ecology from Edwin Liu/Rhône-Poulenc dated February 24, 1995 (copy to Tom Post/EPA 10), other former uses of adjacent property are potentially significant sources of contamination. A metal recycling facility used to be located up-gradient from RP, on what is now Boeing property, at the head or east end of Slip No. 6. Ship repair operations occurred within Slip No. 6 when the Port of Seattle owned Slip No. 6. In addition, Boeing Field is located up-gradient from the Rhône-Poulenc facility. All of these operations could have resulted in higher metals concentrations in groundwater which could be migrating onto the Rhône-Poulenc facility. As has been seen at other sites, another potential source of metals in groundwater within fill is the fill itself; the Rhône-Poulenc facility is constructed on filled tidal marsh.

The statistical comparison of background groundwater concentrations to concentrations detected at the Rhône-Poulenc facility has not been performed. This comparison will be done as part of the RA/MCS evaluation, as mentioned in the RFI. The area where the facility is located is heavily industrialized and has been since the mid-1900s; background concentrations of metals are expected to be high. Since the seeps consist of a mixture of groundwater and surface water, the statistical evaluation of background groundwater concentrations will also have an impact on the seep assessment.

It should be noted that most of the process and storm sewers cleaned were installed in the 1950s. Because these sewers had never been cleaned, the sediment concentrations would be expected to be high and to be indicative of aerial deposition (e.g., arsenic from the Asarco smelter) and street contamination (e.g., lead from vehicle exhaust) from the 1950s through the present. As indicated in two separate studies of vactor wastes (storm sewer sludge) performed by Ecology (Ecology, 1993 and 1994), metals concentrations in vactor wastes are high, and concentrations vary dramatically and do not appear to be related to land use.

6. Page 6-5, last paragraph. The Duwamish River is too complex to attempt to estimate sedimentation rates from studies conducted in other locations of the river. Ecology requires site-specific information on sedimentation rates, and contaminant concentrations on depositing particles, to conduct any such analysis as is attempted here. Recent estimates of loading from the river are very low, about 0.25 cm/yr (see Supplemental RI for Harbor Island and Seattle Waterfront Recontamination Study Reports). The estimates used are probably too high. In addition, there is always the potential for scour from vessels and the river itself. At this point in an investigation, we focus on using sampling to determine whether contamination is present that may have originated from the facility. If contamination is found, natural recovery evaluations may be employed during the evaluation of cleanup alternatives, and must use site-specific data.

The comment is noted. It should also be noted that the Duwamish Waterway in front of the Rhône-Poulenc facility was dredged in February 1996, as part of the ongoing maintenance dredging of the river by the US Army Corps of Engineers. We are trying to obtain additional information from the Corps on this dredging. The need for maintenance dredging for navigation purposes indicates that ongoing sediment deposition is occurring in this stretch of the Duwamish Waterway.

7. Page 6-6, summary of proposed sampling. Based on the above comment and the comments on Appendix G, sampling of metals in sediments near outfall discharge points is required for all outfalls. Sampling of phenols and methylated phenols is likewise required for Outfall 4.

Sampling of metals in sediments for all outfalls will be added to Appendix G. Phenols and methylated phenols will be added to the proposed sampling near Outfall 4

Appendix G, Page 1. All outfall discharge areas must be sampled, for the reasons discussed in comment 6, above. Sampling of metals in sediments near outfall discharge points is required for all outfalls. Sampling of phenols and methylated phenols is likewise required for Outfall 4.

Comment noted. See response to Comment 7.

Appendix G, Page 3. The Sediment Management Standards (SMS) require a minimum of three stations at each discharge area to determine whether adverse impacts are significant enough to require cleanup. Composite samples are not allowed, as they obscure patterns and gradients that help in source identification. One sample should be located directly at the terminus of the outfall (as close as possible) and two additional samples should be located offshore of the outfall (e.g., in a triangular pattern). If sediments nearest the outfall are highly coarse-grained, the two additional stations should be in the closest area offshore that has finer-grained sediments.

Although the Sediment Management Standards require the use of three stations for identifying station clusters of potential concern, Rhône-Poulenc believes that the former discharges from the various outfalls are similar enough to qualify as "spatially and chemically similar" (WAC 173-304-510[2]). Outfalls 6 and 7 (along the Duwamish) are approximately 200 feet apart. The area where these two outfalls discharge was the zone next to the Rhône-Poulenc facility where the seven RFI and nine Landau Duwamish sediment samples were taken (see Figure 4-4 of the Memorandum). The other outfalls are also close together: the distance between the King County Outfall and Outfall 2 is 70 feet, Outfall 2 and Outfall 3 is 50 feet, Outfall 3 and Outfall 4 is 100 feet, and Outfall 4 and Outfall 5 is 140 feet. These distances are less than have been used in other potentially contaminated sediment sites to determine whether contamination exists and needs to be remediated. For example, sediments at the Central Seattle Waterfront is currently being investigated by Ecology and other local agencies under the Elliott Bay/Duwamish Restoration Program. At the Central Seattle Waterfront, the samples closest to two outfalls are 160 and 240 feet away (University Street CSO/SD and Madison Street CSO/SD, respectively). The next nearest sediment sample to the Madison Street CSO/SD is approximately 90 feet from the nearest sample.

In addition, the outfalls drained the same plant, so the contaminants would be expected to be similar. The historical operations where stormwater may have discharged to each outfall can be found in Rhône-Poulenc's response to EPA comments on the RFI (May 5, 1995, letter to Tom Post/EPA 10 from Liz Luecker/CH2M HILL). Historically the sewer lines from the facility outfalls along Slip No. 6 have been cross connected at various times (see Round 3 Technical Memorandum). As indicated by the data provided in the Memorandum for sewer sediment samples taken from the outfall lines, metals and methylated phenols and phenols (methylated phenols and phenols in Outfall 4 only) were the only contaminants that exceeded the CSLs in the outfall lines. Because EPA and Ecology stated that new data indicate not as much sedimentation is occurring in this area of the Duwamish as was previously thought, Rhône-Poulenc will obtain a grab sample

"directly at the terminus of each outfall (as close as possible)"; the sample will not be a composite of several locations around the outfall. All sediment samples will be analyzed for metals. In order to provide the three samples for a sediment cluster for methylated phenols and phenols, sediment samples at the discharges of outfalls 3 and 5 will also be analyzed for methylated phenols and phenols. A revised version of the Storm Sewer Outfall Intertidal Sediments Field Sampling Plan is enclosed.

References:

Washington State Department of Ecology, Contaminants in Vactor Truck Wastes, prepared by Dave Serdat for Water Quality Program, April 1993

Washington State Department of Ecology, Model Plan for Regional Vactor Waste Disposal, March 1994 (Appendix D includes characterization of vactor waste in King County)

Storm Sewer Outfall Intertidal Sediments Field Sampling Plan

Rhône-Poulenc Inc's Marginal Way Facility Tukwila, Washington

Introduction

This Field Sampling Plan (FSP) outlines the procedures for sediment sampling in the intertidal area and in a manhole in the King County Storm Drain located on Rhône-Poulenc Inc's (RPI's) Marginal Way Facility (the Facility) in Tukwila, Washington (see Figure 1). Intertidal sediment sampling will be conducted at the locations of the Facility discharges from former outfalls 2 through 6, at the current Facility discharge from outfall 7, and at the current King County Storm Drain outfall discharge into Slip No. 6.

Intertidal sediment sampling is required because contaminated residual sediments were found in Facility storm sewer pipelines. The results of sampling conducted on residual sediments and the rationale for additional sampling are presented in the draft Round 3 Data and Sewer Sediment Technical Memorandum (RPI, January 1996).

Concentrations of Facility constituents of concern detected in residual sediment samples exceeded at least one Cleanup Screening Level/Minimum Cleanup Level (CSL/MCUL) in each of the seven outfall lines at the Facility. All physically accessible sewers were cleaned to remove the sediments. Additional intertidal sampling was recommended in areas where the sediments in the intertidal zone below the outfall might have been affected by Facility discharges.

Outfall 1 represents the point where Facility stormwater discharges to the King County Storm Drain upstream of the King County outfall (Figure 1). Combined stormwater from the eastern portion of the Facility and large developed areas (offsite) east of the Facility discharges to Slip No. 6 through the King County outfall. Sediments below the King County outfall are representative of the entire King County Storm Drain and are not solely representative of discharges from the Facility. Sediment samples will be taken at the discharge of the King County Storm Drain outfall and from manhole(s) upstream from the Facility discharge to the King County Storm Drain. Sampling of sediments in the manhole will help differentiate the contribution of Facility sewer sediment constituents to intertidal sediments at this outfall from other upstream contributors to the King County Storm Drain.

Sampling Methods and Field Procedures

Sampling Schedule

To maximize the area of sediment available for sampling below each outfall, sampling should be conducted during a minus low tide, preferably during minus-1-foot or greater tides. Table

1 shows the dates and heights of minus-1- to minus-3-foot tides that will occur during daylight hours through August 1996.

Sampling Locations

It should be noted that former outfalls 2, 3, 4 and 5 and the King County Storm Drain outfall discharge to Slip No. 6. The Boeing Company owns Slip No. 6 and its shoreline; permission to gain access to these outfalls may need to be obtained from Boeing prior to sampling.

Outfall Sampling

The discharge pipes from outfalls 6 and 7 were not observed during RFI field activities and may need to be located based on historical drawings. The discharge pipes may be present beneath the vegetation (i.e., blackberries) on the banks of the Duwamish Waterway or within the riprap. If the actual discharge pipe cannot be located, the sampling location will be selected based on historical maps. Figure 1 shows the outfall locations based on a compilation of Facility maps of the sewer systems. Five outfalls scheduled for intertidal sediment sampling are located along Slip No. 6 (the King County outfall and outfalls 2, 3, 4, and 5), and two other outfalls are located along the Duwamish Waterway (outfalls 6 and 7).

Once the sampling location has been identified, the location will be marked with flagging tape on the perimeter fencing. The sampling locations will be located with respect to permanent Facility reference points by measuring with a tape to the nearest 0.1 foot. The sampling locations will be surveyed horizontally and vertically in accordance with the RFI Workplan, Section 5.6.7 (RPI, December 1993).

Manhole Sampling

Two weeks prior to sampling, the first manhole in the King County Storm Drain upstream from the Facility discharge (outfall 1) will be located and inspected for for the amount of sediments and the need for confined space entry. Based on Facility drawings, the manhole to be sampled is the second manhole upstream from the King County Storm Drain outfall discharge point. If this manhole does not have adequate sediment to sample, the next manhole upstream will be located.All available sediment from the first manhole will be taken; if additional sediment is needed, enough sediment from the second manhole will be taken in order to obtain the remaining sample volume.

This manhole may be located on City right-of-way, on Kenworth Truck property, or on another owner's property. In these cases, permission to gain access will need to be obtained prior to sampling

Sample Collection Procedures

Outfall Sampling

The sediment sample collected at each outfall will be a grab sample taken as close as possible to the terminus of the outfall. The sampling strategy will vary depending upon the physical condition of the shoreline at the sampling location, the location of the discharge pipe, and the location of sediments in the vicinity of the discharge pipe. The shoreline and intertidal zone along the Duwamish Waterway adjacent to the Facility consists of a steep zone of riprap with

a broad, flat intertidal zone of soft sediments. The riprap along Slip No. 6 is less steep; however, the intertidal zone below the riprap along Slip No. 6 is narrow and slopes steeply.

Outfalls 6 and 7 are believed to terminate in the riprap or in blackberry bushes along the Duwamish Waterway. Water would have discharged directly into the riprap, over the riprap, or onto the intertidal sediments adjacent to the riprap. Outfalls 2, 3, 4, and 5 were located along Slip No. 6. The ends of the discharge pipes are located above the riprap or were not visible (may be located in blackberry bushes). Water from outfalls terminating above the riprap would have discharged onto the riprap and flowed down to the intertidal sediments. Two sampling strategies are proposed to accommodate the possible outfall configurations:

1. To obtain samples from the outfalls that discharge beyond the riprap, the sample will be obtained from as close as possible to the end of the pipe (Figure 2).

2. If the outfall discharged into or above the riprap, the samples will be obtained from the intertidal zone below the riprap. A line will be extended from the end of the pipe (or its inferred location if the pipe cannot be found) to the base of the riprap (or blackberry bushes). The sample will be taken from the end of this line, adjacent to the riprap, in the sediment (Figure 3).

If the outfall cannot be located, sampling strategy 2 will be used to collect the sample.

Sediments from the surface to a depth of 10 cm (4 inches) will be taken from each sampling location. The samples will be obtained with a laboratory-grade HDPE scoop and placed in a laboratory-grade HDPE bowl for homogenization. The scoop and bowl will be decontaminated prior to sample collection in accordance with the procedures outlined in the RFI Workplan . The total amount of sediment required for each metals sample is approximately 8 ounces (250 milliliters). At outfalls 3, 4, and 5 only, additional sample will be needed for analysis of phenols and methyl phenols; an additional 8-ounces (250 milliliters) of sediment will be collected for the additional analyses. Additional sample material may be needed for a laboratory matrix spike, as required by PSEP. Each sample will be thoroughly mixed prior to filling the laboratory-provided sample containers.

Manhole Sampling

The sewer sediment sample will consist of multiple "grabs" from a single sampling location. To ensure that the sample is representative, grabs will be collected from the bottom of the manhole and from inside pipes leading away from the manhole, as feasible.

The grabs will be composited into one representative sample for the manhole. Manhole sediments will be collected with decontaminated HDPE scoops or dedicated, pre-cleaned glass sample jars attached to an extendible pole with stainless-steel hose clamps. The glass sample jars will be provided by the laboratory. The grabs will be composited in a decontaminated HDPE bowl and mixed until a homogenous texture is obtained. The sample will be described, photographed, and placed in a sample container provided by the laboratory.

Field Documentation and Sample Management Procedures

Field documentation will include recording the following in a field notebook:

- The locations of the sample collection sites
- The procedures used to collect the samples including the general sediment conditions, calibration of air monitoring equipment, and readings from the sampling locations
- The number and types of samples collected
- Documentation of sample delivery to the analytical laboratory.

The sampling locations and procedures will also be documented with photographs.

The samples will be placed on ice immediately after sampling and will be delivered to the contract laboratory by hand (either by the sampling personnel or by courier).

Outfall Sampling

Sample descriptions will be recorded immediately after homogenization of the samples. The following observations will be documented in the field logbook:

- A sketch showing the location of the sample with respect to the outfall and surrounding features
- The texture of the sediments
- The color of the sediments
- The approximate grain size distribution and composition of the sediments

Manhole Sampling

Sample descriptions will be recorded immediately after homogenization of the samples. The following observations will be documented in the field logbook:

- A cross-sectional sketch showing the approximate sampling depth
- A plan view sketch showing the location of sediments in the pipe, catch basin, or manhole, and number, size, and types of pipes entering the manhole
- The texture of the sediments
- The color of the sediments
- The presence/absence of water (including the water color)
- The presence/absence of oily sheen
- The presence/absence of odor (e.g., of hydrogen sulfide or oil)
- Observations on the relative volume and depth of sediments present in the pipe, catch basin, or manhole, if possible (e.g., using a yardstick)
- Other observations that may be unusual

Sample Labeling

Each sample will be designated with a unique alphanumeric identifier ("sample number"). Outfall samples will be designated according to the following scheme:

02-INTSED

where:

02 = Location code representing the outfall number (outfall 2). The King County outfall will be labeled KC. Equipment blank samples will be identified by the outfall number of the sample preceding the equipment blank.

INTSED = Designates that the sample matrix consists of sediments from the intertidal zone (as opposed to previous sediment samples obtained during the RFI from within the storm sewer lines). Equipment blanks will be identified as "WTR".

To parallel previous sampling of the storm sewers at the Facility, the manhole samples will be labeled as follows:

KC2-SWO

where:

KC2 = Location code representing the King County Storm Drain, the second manhole from the discharge to Slip No. 6.

SWO = Location code representing "stormwater outfall"

The sample numbers will be recorded in the field notebook, on sample container labels and lids, and on chain-of-custody forms. Other information on each sample container will include

- The time and date of sampling
- The initials of the sampler(s)
- The laboratory analysis to be performed

Field QC Samples

Field QC samples will consist of one equipment blank per day. (A trip blank will not be collected because analyses for volatile organic compounds will not be conducted;. a duplicate sample will not be collected because of the complex sampling matrix.) The equipment blanks will consist of deionized and distilled ASTM Type II water poured over decontaminated sampling spoons and mixing bowls. The equipment blank will be analyzed for metals and phenols and methyl phenols. Equipment blanks will only be analyzed for phenols and methyl phenols on days when phenol and methyl phenol sediment samples are collected.

Field QC samples will be identified using the same procedures as for "true" samples and will be called out as QC samples in the field logbook only. Field QC samples will not be identifiable by the laboratory.

Sampling Equipment

The following equipment will be required to complete the sampling:

- Laboratory-prepared sample containers (8-oz. [250-ml.] jars with Teflon-lined lids)
- Sample cooler
- Measuring tape
- Flagging tape
- Nitrile inner gloves
- HDPE scoops or spoons (8)
- HDPE bowls or containers (8)
- Liquinox
- Nitric acid (for equipment decontamination)
-
- Deionized and distilled ASTM Type II water (for decontamination water and equipment blank)
- Two decontamination tubs
- Camera and film
- Marker pens
- Field logbook
- Clear tape
- Paper towels
- Sealing plastic bags (1-quart and 1-gallon size)
- Trash bags
- Aluminum foil
- Ice for sample preservation
- Bubble wrap
- Forms (chain-of-custody and Federal Express)
- Custody seals

Decontamination Procedures

Sampling equipment will be decontaminated following the procedures for aqueous sampling equipment specified in Section 5.6.4 of the RFI Workplan. Sufficient stainless-steel sampling equipment will be decontaminated for use prior to each day's sampling. Decontaminated equipment will be wrapped in plastic wrap and placed in a clean garbage bag for transport to the sampling location.

Analytical Laboratory

Analytical Parameters and Methods

All samples will be analyzed for metals. Samples for sediment at outfalls 3, 4, and 5 will also be analyzed for phenols and methyl phenols. The holding time for metals analyses is 6 months from the date of sample collection. Phenols and methyl phenols must be extracted within 14 days and analyzed within 40 days of sampling.

The analytical protocols used will be the EPA Contract Laboratory Program (CLP) protocols as adapted by the Puget Sound Estuary Program (PSEP). Laboratory work will be conducted under the RFI Workplan Laboratory Statement of Work (Appendix G of the Workplan).

Laboratory QA/QC

Laboratory QA/QC will be as specified in Appendix G of the RFI Workplan.

Data Validation

Data validation will be performed as specified in the RFI Workplan.

References

Rhône-Poulenc Inc. *RCRA Facility Investigation Workplan for the Marginal Way Facility, Tukwila, Washington.* Prepared for U.S. Environmental Protection Agency Region 10, Seattle, Washington, December 1993.

Rhône-Poulenc Inc. *Draft Round 3 Data and Sewer Sediment Technical Memorandum.* Prepared for U.S. Environmental Protection Agency Region 10, Seattle, Washington, January 1996.

Table 1
Minus-1-Foot or Lower Tide Events During Daylight Hours in the Duwamish Waterway

Date	Day	Low Tide Elevation[1] (ft)	Time
6/14/96	Friday	-1.2	10:59
6/17/96	Monday	-1.3	12:42
6/18/96	Tuesday	-1.0	13:17
6/28/96	Friday	-1.1	9:36
7/1/96	Monday	-3.0	11:50
7/2/96	Tuesday	-2.9	12:35
7/13/96	Wednesday	-2.4	13:22
7/4/96	Thursday	-1.4	14:09
7/15/96	Monday	-1.0	11:48
7/29/96	Monday	-2.3	10:46
7/30/96	Tuesday	-2.4	11:33
7/31/96	Wednesday	-2.1	12:19
8/1/96	Thursday	-1.3	13:05
8/26/96	Monday	-1.1	9:37
8/27/96	Tuesday	-1.2	10:28
8/28/96	Wednesday	-1.0	11:16

[1] Elevation datum is mean lower low water (NOAA)

106063.A8.ZZ • Rhone-Poulenc • 2-3/Storm sewer cleaned-BW • 12-12-95 • LW • JG

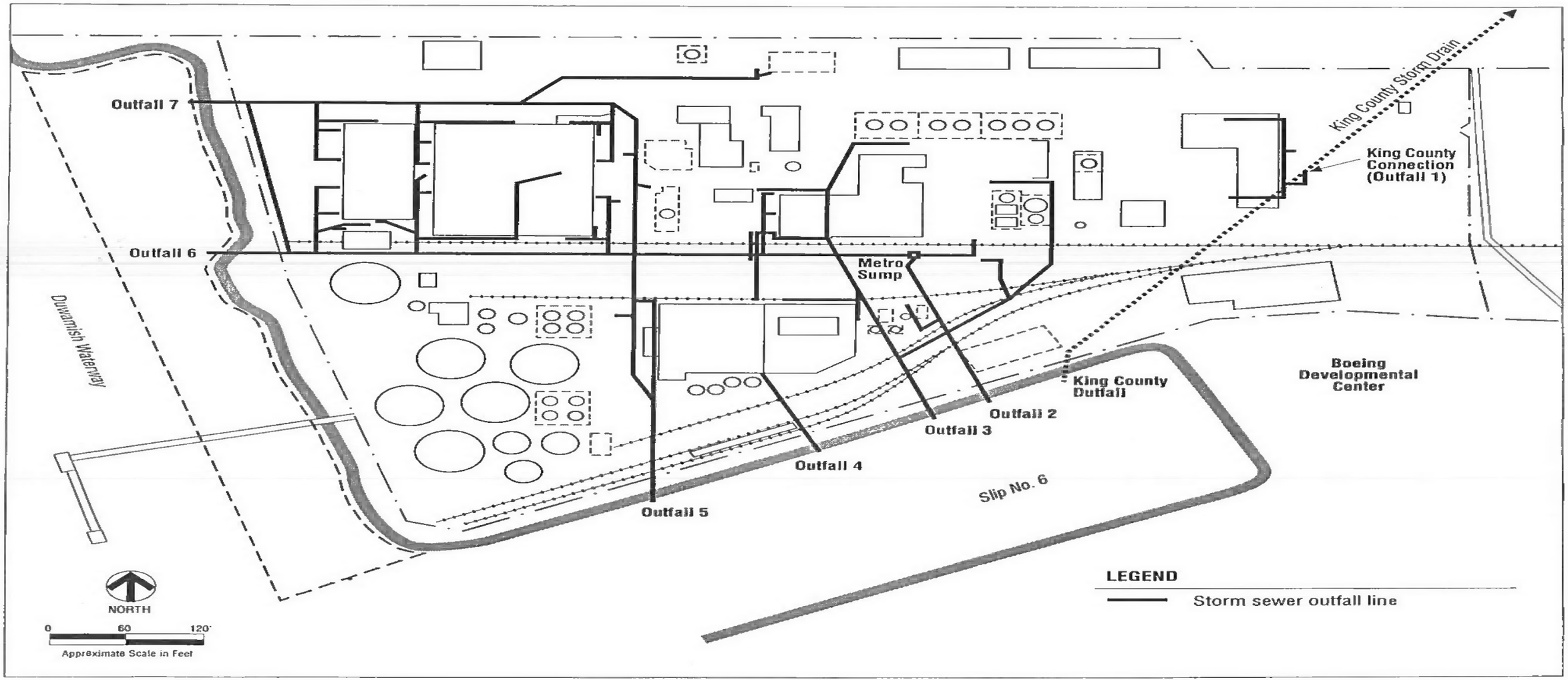
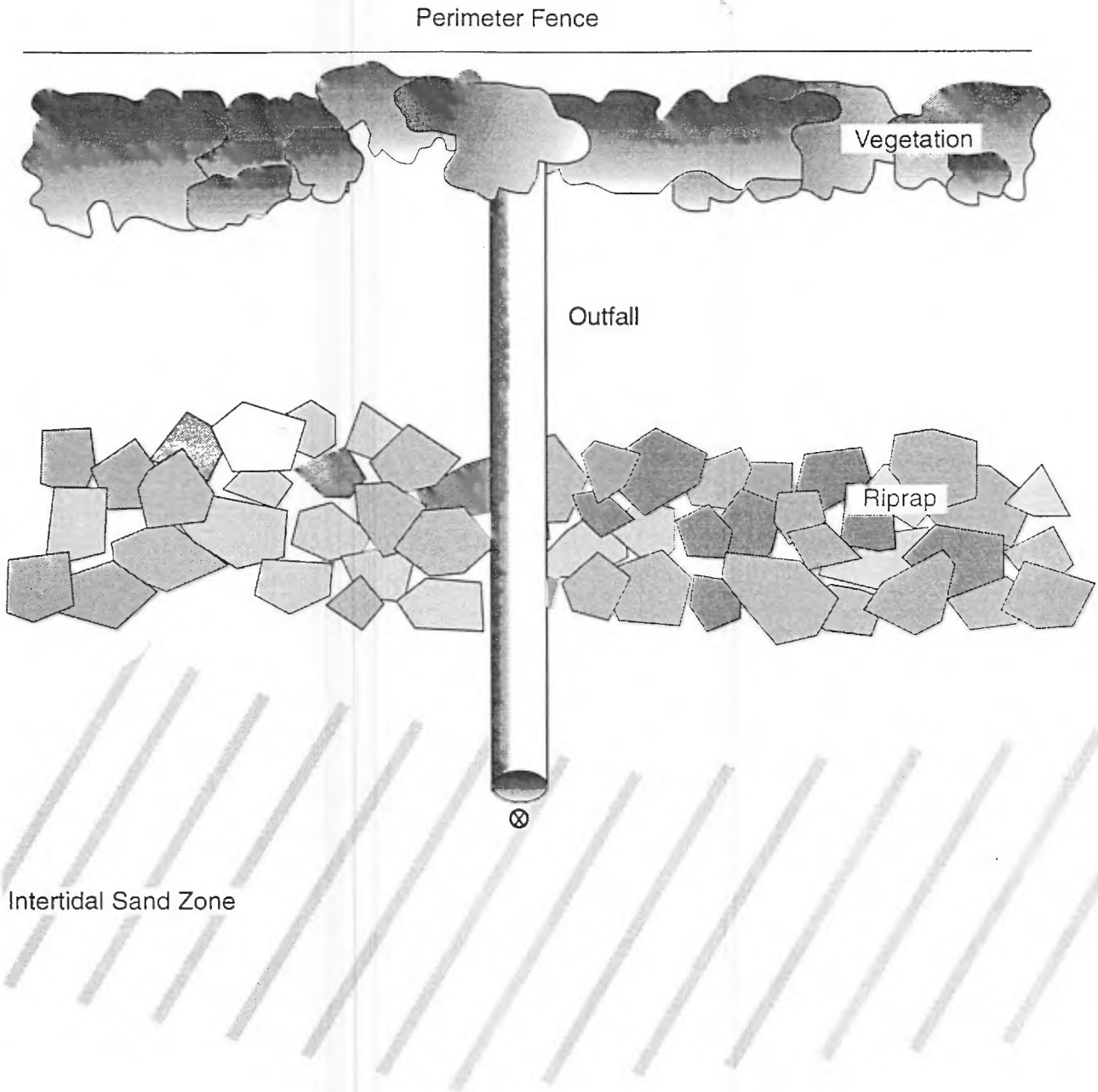


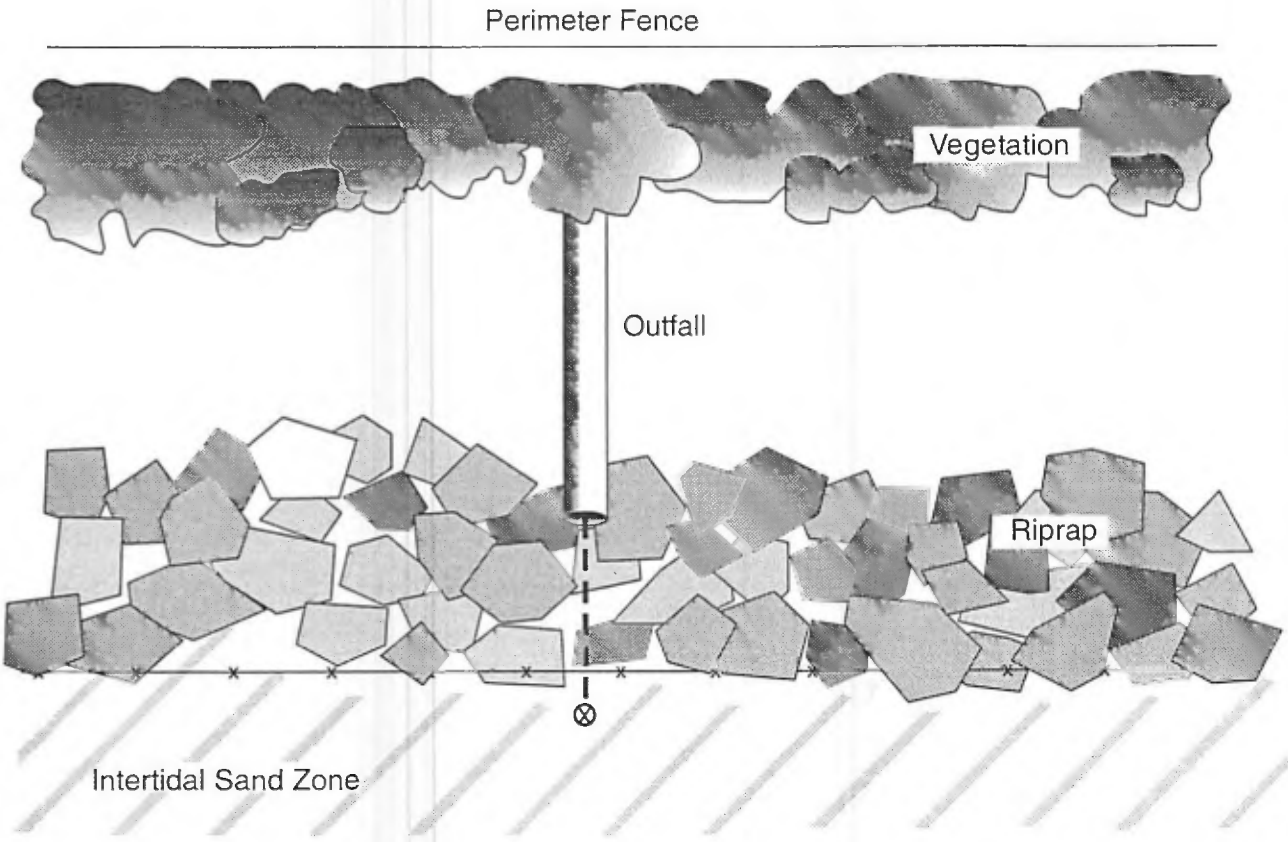
Figure 1
Locations of Storm Sewer Outfall Lines



LEGEND

⊗ Subsampling Location
Not to Scale

Figure 2
Outfall Intertidal Sediment Sampling Strategy — Outfall Past Riprap



LEGEND

⊗ Subsampling Location

Not to Scale

Figure 3

Outfall Intertidal Sediment Sampling Strategy — Outfall in Riprap, Sampling Below Riprap

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

DEC 15 1994

Reply to
Attn. of: HW-104

Edwin Liu
Remediation Engineer
Specialty Chemicals Division
Rhone-Poulenc, Inc.
CN7500
Cranbury, New Jersey 08512

Re: EPA Comments On Data Review of Arsenic and PAH Occurrences
Docket No. 1091-11-20-3008(h)
EPA ID No. WAD 00928 2302

Dear Edwin,

The United States Environmental Protection Agency (EPA) has received and reviewed the Draft Data Review of Arsenic and PAH Occurrences (October 19, 1994) for your Tukwila facility. Overall, we found the report to be very well done and convincing. At this time, arsenic and PAH detected at the facility do not seem to exceed the background occurrences in the area.

Enclosed are our comments which should be included in the final report and/or RFI report. If you or your representatives have any questions regarding these comments or this letter, please call me at (206) 553-1604.

Sincerely,

Tom C. Post

Tom C. Post, Compliance Officer
RCRA Compliance Section

Enclosure

cc: Byung Maeng, WDOE NWRO
Sue Hays, Hays Consulting

EPA COMMENTS
DRAFT DATA REVIEW OF ARSENIC AND PAH OCCURRENCES
RHONE-POULENC TUKWILA FACILITY
DECEMBER 14, 1994

1. There appears to be a discrepancy between the number of values and detection ranges given in the text on Table 1, page 6, for the facility (related to footnote 1 (site assessment), and the text in pages 2 and 5 (RFI data). In the table it states that soil concentration at the facility detected Arsenic in 154 of 156 samples, but Table 1 shows 23 of 252 detects. The table should include all Rhone-Poulenc data.

2. Page 10, section 3a. The equation and support info for the Boeing Company calculation of the EP Toxicity value correlation between soil and water should be included as an appendix to the report.

3. The Washington Department of Ecology has recently published a report on Natural Background Soil Metals Concentrations in Washington State, October 1994. This should probably be used and referenced as part of this specific background study for Rhone-Poulenc since it supports the Rhone-Poulenc conclusions.

4. Examples of action levels for the PAHs can be found in Kalama Chemical's final Appendix K for their RFI Report. This appendix was mailed today to Rachel Chang of CH2M Hill's Bellevue office. Action levels for arsenic are readily available. Rhone-Poulenc should verify and document whether levels of both arsenic and PAHs in soils, and their mean-levels in groundwater, fall below action levels. The conclusions should be discussed in the report - possibly under 'Discussions' and/or 'Summary and Conclusion'.